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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,127

12/19/2006

Kohichi Ohsumi

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IBM MICROELECTRONICS
INTELLECTUAL PROPERTY LAW
1000 RIVER STREET
972 E
ESSEX JUNCTION, VT 05452

EXAMINER

ARBES, CARL J

ART UNIT

PAPER NUMBER

3729

MAIL DATE

DELIVERY MODE

06/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,127	Applicant(s) OHSUMI ET AL.	
	Examiner C. J. Arbes	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>herein</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim 2 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear, vague and indefinite what Applicants intend when they recite ...(i) exposing said photosensitive resin to light from above said base substrate using a photomask less process; and (ii) exposing said photosensitive resin to light from above the base substrate using a photomask that shields the opening of said through hole from the light. It appears that in one instance Applicants are using a photomask and at the same time are not using a photomask. This claim is held to be confusing if it is not held to be unclear, vague and indefinite. It is hoped that Applicants will be able to specifically point out in the original specification where Applicants disclose what they are intending to claim in said Claim 2.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al (Pat No. 6,930,258 B1); hereinafter Kawasaki et al..

Kawasaki et al teach a method of producing a multilayer printed wiring board (PWB). Through holes (36) are provided through substrate (30). Via holes (66) are connected to the through holes. Solder bumps (76) are connected to the via holes. The through hole surfaces are electrolessly (42) and electroplated (44) with copper (Cf. Col 10). After

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resin material (54) is loaded into the through holes (36) and also in the via holes (46) (Cf. Col. 10), it is heated. The resins that can be used include thermosetting, thermoplastic, photosensitive, complexes thereof and the like (Cf. Col 12). Plated covers (5*) are provided on the openings of the via holes (46) (Cf. Col 13) Subsequent to placing resin insulating layers (50) on the substrate surfaces a solder resist layer (70) (Col 14) is applied to the insulating layers (Cf. also Figs. 5A-5C). If in fact Kawasaki et al do not teach exposing photosensitive resin to light and then developing it is held that a PHOSITA would be able to do this without undue skill. Alternatively since Kawasaki et al teach using *inter alia* photosensitive resins and since by definition light and developing are necessary to "cure" these types of resins it is inherent that light and development is a part of using photosensitive resin. As applied to claim 3 it is held to be within the ordinary skill in this art to form the photoresist (70) and then remove it after forming the 1st conductive layer. Moreover by comparing Figures 5 and 6 it is seen that photoresist (70) is removed after formation of the 1st conductive layer (conductive layers in through holes (36)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. J. Arbes whose telephone number is 571-272-4563. The examiner can normally be reached on M, T, R and F from 8 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, P. Vo, can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/C. J. Arbes/
Primary Examiner, Art Unit 3729